

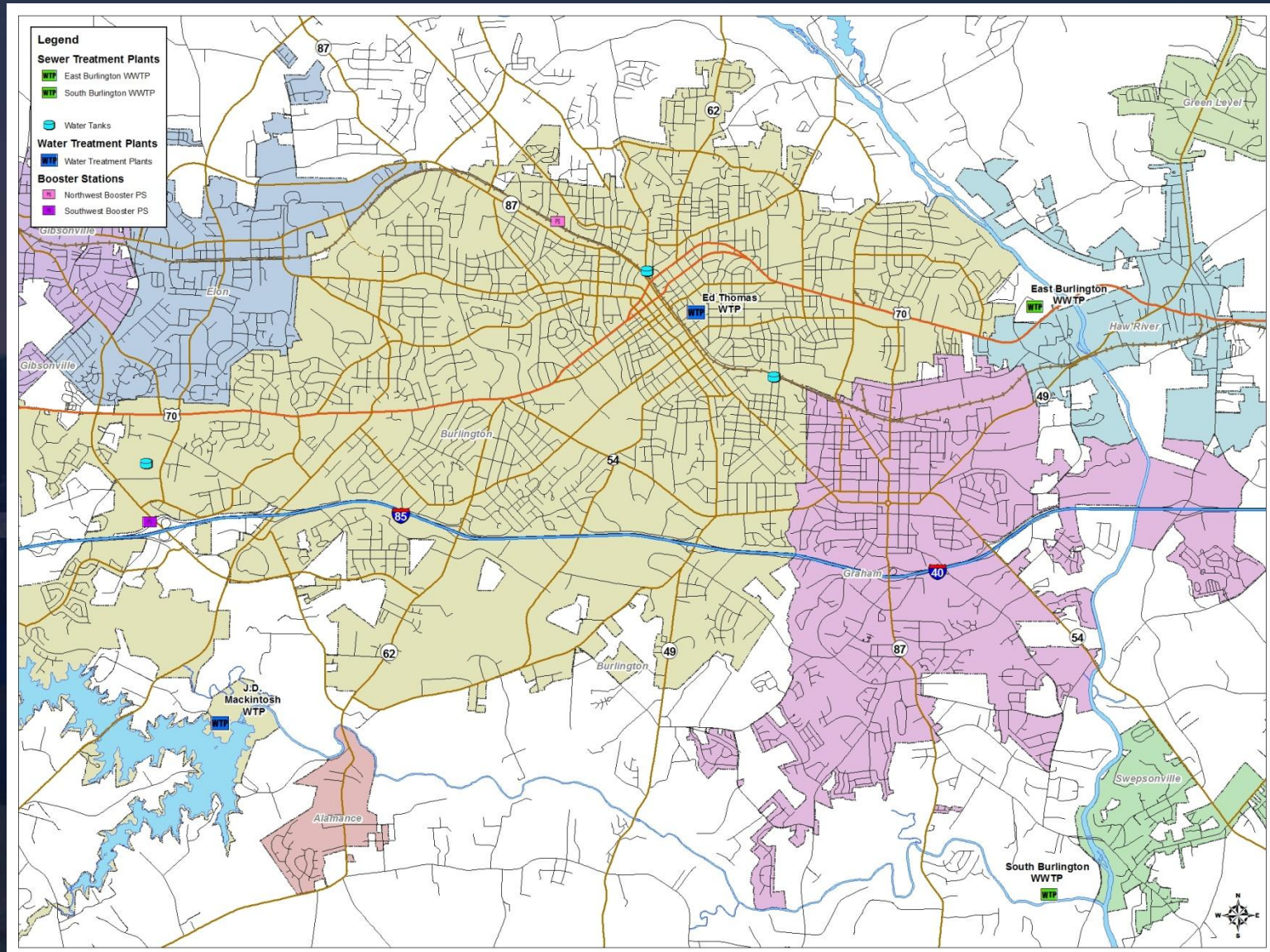


Burlington Wastewater Treatment Plant Upgrades – Nutrient Removal Improvements 2010-2014

Bob Patterson, PE
Water Resources Director
March 19, 2014



Burlington – Regional Utility Provider



Burlington Wastewater Treatment



- **East Burlington WWTP**
 - **Commissioned 1961**
 - major upgrades in 1977, 1980, late 1980s, & 1993
 - **12 MGD capacity: 2013 average day ~ 4.4 MGD**
 - **Serves north and east areas of Burlington, Town of Haw River, Green Level & portions of Towns of Elon, & Gibsonville**



Burlington Wastewater Treatment



- **South Burlington WWTP**
 - **Comissioned 1971**
 - **major upgrades in 1983, 1989, & 1992**
 - **12 MGD capacity; 2013 average day ~ 6.6 MGD**
 - **Serves south and west areas of Burlington, Village of Alamance, Town of Swepsonville, portions of towns Elon & Gibsonville, and portion of City of Graham.**



Burlington Timeline – Jordan Lake Rules



- **August 2009: rules adopted**
- **September – December 2009: Hazen & Sawyer Preliminary Engineering Report**
- **February – December 2010: South Plant Filter Replacement Design, Bidding, Financing (combined with repairs at 2 water supply dams)**
- **January 2011 – April 2013: Construction of Filter Facility at South Plant**
- **January – December 2011: Nutrient Removal Improvements East Plant and South Plant Design, Bidding, Financing**
- **January 2012 – Present: Construction of Nutrient Removal Improvements at both plants**

South Burlington WWTP Filter Scope



- **Project Scope**
 - Demolish and remove existing filter
 - Install new filtration facility and controls

- **Project Status**
 - Contract Amount: \$5,708,000
 - Construction start – Spring 2011
 - Contract Completion April 21, 2013



New Filter Facility



Filter Chambers



Old Filter Chamber



New Filter Without Media



South Burlington WWTP Nutrient Improvements



- **Project Scope**
 - Influent pump upgrades
 - Process Improvements
 - Aeration upgrades
 - Flow distribution improvements
 - Control system upgrades
 - Generator upgrade
- **Project Status**
 - Contract Amount: \$9,801,500
 - Construction began – Spring 2012
 - Current status – nutrient removal improvements on line, punch list and generator items remain

South Plant Aeration Piping



Former Aeration Basin



New Aeration Piping



South Plant – Flow Splitter Box



Burlington - South Plant - 10/20/20
Shows - May 28, 2021 - Photo

East Burlington WWTP Nutrient Improvements



- **Project Scope**
 - Process modifications
 - Influent pump station upgrades
 - Aeration upgrades
 - Flow distribution improvements
 - Control system upgrades
- **Project Status**
 - Contract Amount: \$6,822,000
 - Construction began – Spring 2012
 - Current Status – nutrient removal improvements on line - punch list, instrumentation, outstanding
 - *Force main replacement

Temporary Bypass Pumps



Formwork for interior basin wall



East Plant Aeration Improvements



New Aeration System

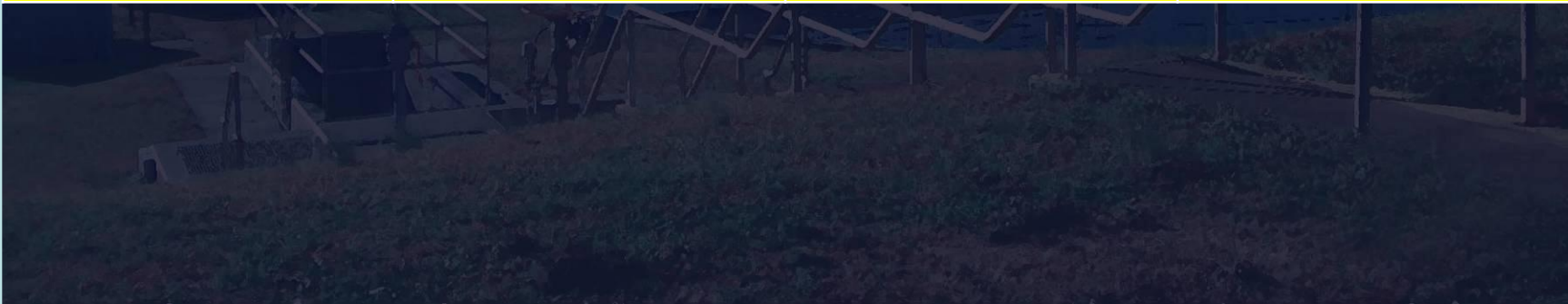
Existing Aeration Piping



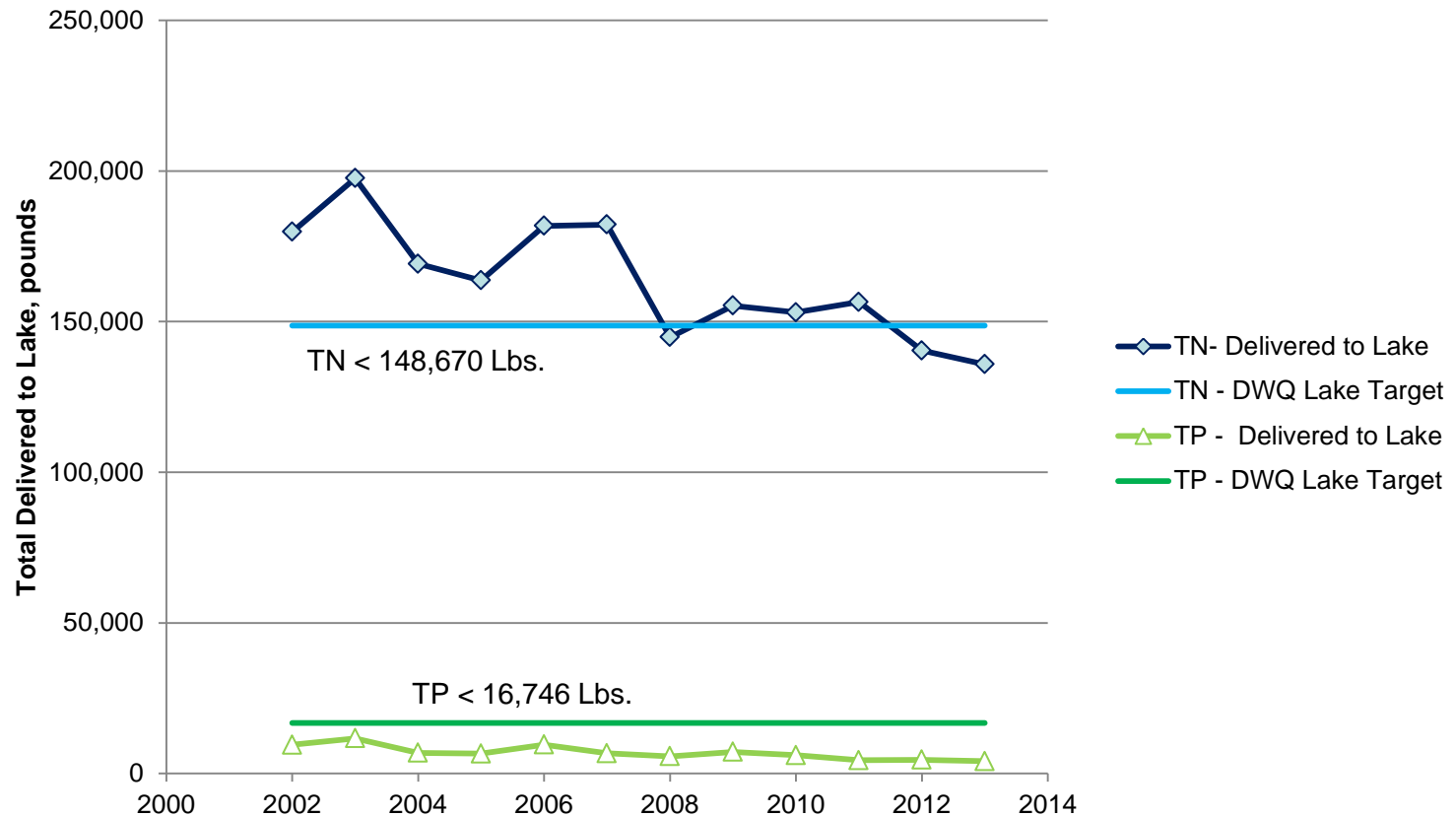
Design, Construction Administration and Construction Costs



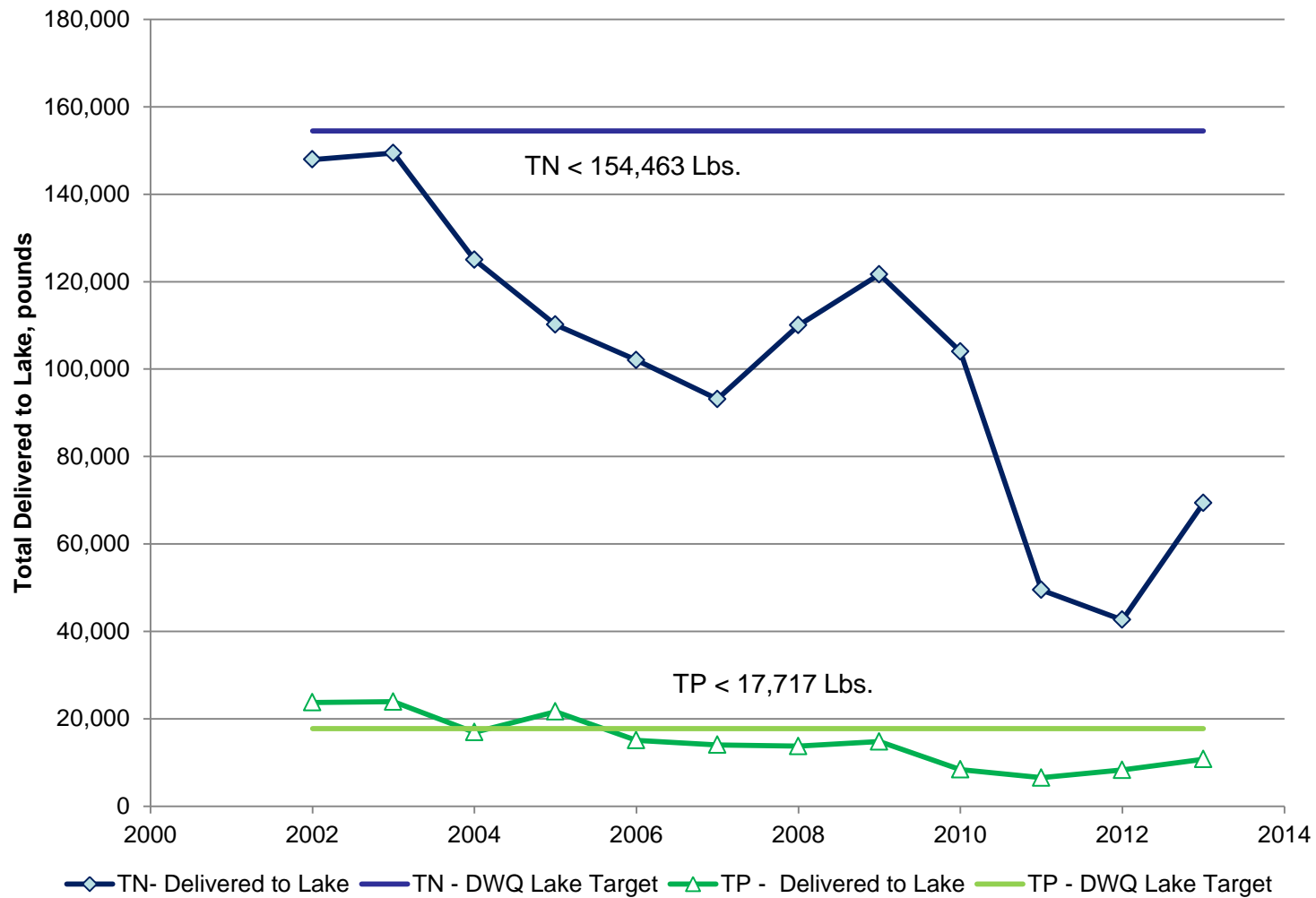
	Construction	Engineering Design & Construction Services	Total
Stoney Creek Dam Repairs	\$ 2,799,000	\$ 811,000	\$ 3,610,000
Lake Cammack Dam Repairs	\$ 1,122,000	\$ 585,000	\$ 1,707,000
SBWWTP Filter Replacement	\$ 5,637,000	\$ 1,097,000	\$ 6,734,000
EBWWTP Nutrient Removal Upgrades	\$ 6,822,000	\$ 1,374,000	\$ 8,196,000
SBWWTP Nutrient Removal Upgrades	\$ 9,802,000	\$ 1,410,000	\$ 11,212,000
Totals	\$ 26,182,000	\$ 5,277,000	\$ 31,459,000
WWTP Only	\$ 22,261,000	\$ 3,881,000	\$ 26,142,000



East Burlington WWTP - TN, TP Delivered to Lake



South Burlington WWTP - TN, TP Delivered to Lake



Questions

